



Distinguishing between Innocuous and Dangerous Symptoms

1.

How do we distinguish innocuous from dangerous symptoms, such as bloating pains that come and go?

Question submitted by:
Dr. Joseph Feldmann
Toronto, Ontario

The distinction between benign and sinister gastrointestinal symptoms is generally difficult to make, with no clear data supporting reasonable sensitivity or specificity of these factors in diagnostic application. A recent systematic review of the literature assessing the accuracy of primary care physicians, gastroenterologists, and computer models in diagnosing organic dyspepsia in over 11,366 patients across 15 studies suggested that neither clinical impression, nor computer modelling incorporating patient demographics, risk factors, history items, and symptoms adequately distinguished between organic and functional disease in patients referred for endoscopic evaluation of dyspepsia.¹ A systematic review assessing the accuracy of individual symptoms and combinations of findings in diagnosing irritable bowel syndrome (IBS) across 2,355 patients over 10 trials demonstrated limited accuracy of individual symptoms for diagnosing IBS amongst patients referred for evaluation of lower gastrointestinal tract symptoms, although other data have suggested that symptoms in combination with alarm symptoms (age > 50 and rectal bleeding) did have a higher predictive value in separating IBS from organic lower gastrointestinal disease.^{2,3} Despite such established limitations in diagnostic performance, patients presenting with any gastrointestinal symptoms, especially those with alarm characteristics (including anemia, overt bleeding, weight loss, recent change in bowel habit, etc.), require expedient, comprehensive evaluation.

References

1. Moayyedi P, Talley NJ, Fennerty MB, et al: Can the Clinical History Distinguish between Organic and Functional Dyspepsia? *JAMA* 2006; 295(13):1566–1576.
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3. Hammer J, Eslick GD, Howell SC, et al: Diagnostic Yield of Alarm Features in Irritable Bowel Syndrome and Functional Dyspepsia. *Gut* 2004; 53(5):666–672.

Answered by:
Dr. Theodore Xenodemetropoulos



Amount of Iron that Can Be Absorbed Each Day from Iron Salts

2.

What is the maximum amount of iron that can be absorbed each day from iron salts? Do orange juice and vitamin C help much?

Question submitted by:

Dr. Steve Sullivan
Victoria, British Columbia

The typical North American daily diet may contain approximately 10 to 30 mg of elemental iron, of which the body absorbs approximately 5 to 10% in a normal duodenum and proximal jejunum. In iron deficiency, the rate of absorption may increase up to five-fold. The absorption of nonheme iron has recently been elucidated and well described by Nancy Andrews.¹ Absorption of iron salts is tightly regulated by the amount of functional membrane transporters, called ferroportin, and post-transcriptional regulatory mechanisms within enterocytes. **The maximum amount of elemental iron that can be absorbed from iron salts is not known, but it is limited by these physiologic steps and the potential for iron toxicity. In general, the maximum amount of elemental iron that should be given for iron replacement is 180 to 200 mg daily.** There are numerous oral iron preparations available, including several ferrous iron salts, such as ferrous gluconate, ferrous sulfate, and ferrous fumarate. Although elemental iron varies depending on the manufacturer, typically, ferrous gluconate, ferrous sulfate, and ferrous fumarate contain approximately 30 to 36 mg, 60 to 66 mg, and 90 to 100 mg of elemental iron, respectively. Iron supplements are best taken on an empty stomach or with ascorbic acid (vitamin C). **Thus, taking iron supplements with a glass of orange juice is beneficial; however, the benefit derived from ascorbic acid or orange juice has not been quantified.**

Reference

1. Andrews, NC: Forging a Field: The Golden Age of Ironbiology. *Blood* 2008;112(2):219–230.

Answered by:

Dr. Cyrus Hsia and
Dr. Kang Howson-Jan

Safe Duration to Be on Antifungals for Onychomycosis

3.

What is a safe duration of time to have a patient on antifungals for onychomycosis?

Question submitted by:
Dr. Jeff Hogan
Kingston, Ontario

Oral agents, in general, are safe for long-term use. The azole agents can affect metabolism of other medications and have a risk of hepatic side effects. Terbenafine has a very low risk of hepatic changes and an even lower risk of neutropenia. Periodic blood monitoring for extended use is reasonable. While longer than the suggested three-month therapy for onychomycosis may be of benefit, lack of response should prompt a re-evaluation of the diagnosis with proper mycology studies or consultation with a specialist.

Answered by:
Dr. Scott Murray



What to Do after Eradicating *Helicobacter pylori*

4.

After eradicating *Helicobacter pylori* in a patient with heartburn, what would the next step be, given that he continues to have symptoms and his urea breath test is negative? Should the patient be continued on PPIs?

Question submitted by:

Dr. Lili Naghdi
Maple, Ontario

The association between colonization with *Helicobacter pylori* and GERD has been a topic of much interest, speculation, and investigation within gastroenterology. Previous data suggested a lower prevalence of *H. pylori* amongst patients with GERD, although there has been no consistently elevated incidence of GERD developing in patients following treatment for eradication of *H. pylori*.¹ Subgroup analysis of eradication data from a recent intention-to-treat meta-analysis of 10 random controlled trials comparing *H. pylori* treatment with no treatment on symptomatic adults with GERD demonstrated a statistically significant lower incidence of GERD symptoms in the eradicated group (13.8%) compared with the non-eradicated group (24.9%) (OR 0.55; 95% CI: 0.35 to 0.87, $p = 0.01$).² Mechanisms for the association of *H. pylori* and GERD have been extensively hypothesized, but they are far from conclusive.

In the patient presenting with refractory heartburn, despite treatment of *H. pylori*, it would be reasonable to take a detailed history for exclusion of alternate upper GI symptoms (particularly dyspepsia) that can present with symptomatic overlap and to take note of concerning alarm symptoms necessitating expedient endoscopic evaluation. Also, confirmation that the urea breath test was truly negative (*i.e.*, tested with appropriate preceding cessation of PPI and antimicrobial therapies) is important. An empiric trial of PPI therapy at standard and/or high dosage would then be reasonable for at least 8 to 12 weeks, with subsequent referral for gastroenterologist evaluation for those patients with persistent symptoms despite such treatment.

References

1. Shmueli H, Katicic M, Filipec Kanizaj T, *et al*: *Helicobacter Pylori* and Nonmalignant Diseases. *Helicobacter* 2012; 17(Suppl 1):22–25.
2. Saad AM, Choudhary A, Bechtold ML: Effect of *Helicobacter Pylori* Treatment on Gastroesophageal Reflux Disease (GERD): Meta-analysis of Randomized Controlled Trials. *Scand J Gastroenterol* 2012; 47(2):129–135.

Answered by:

Dr. Theodore Xendemetropoulos

Differentiating between Parkinson's Disease and Essential Tremor

5.

How do you differentiate Parkinson's disease from essential tremor?

Question submitted by:

Dr. T.A. Wulff

Vancouver, British Columbia

- **Parkinson's disease tremor** — rest tremor, hands only, usually begins unilaterally, no associated head or voice tremor, associated with other Parkinson's features (bradykinesia, rigidity, shuffling gait)
- **Essential tremor** — kinetic tremor that increases with muscle activation, such as movement; worsened with stress/anxiety or caffeine; it may begin in the patient's hands, but it can also involve the head and voice; often, a family history of tremor is present

Answered by:

Dr. Sarah A. Morrow



6.

Lowering BMI Can Reduce the Risk of Certain Cancers

Is there enough medical evidence available for physicians to be able to advise their patients that lowering their BMI to 25 will reduce their risk of certain cancers?

Question submitted by:

Dr. Ian Bell
New Market, Ontario

Lifestyle factors, including poor diet (low in fruits and vegetables), obesity, smoking, alcohol use, and inactivity have been identified as risk factors for developing cancer.¹ It is estimated that excess weight and obesity is responsible for approximately 20% of all cancers, which include, but are not limited to, breast, colorectal, endometrial, renal, and esophageal cancers.² Classically, a body mass index (BMI) between 25 and 30 kg/m² is defined as being overweight, and a BMI greater than 30 kg/m² is obese. There is limited evidence to definitively say that lowering BMI below a certain threshold will decrease the risk of a particular cancer, and such studies would be subject to confounding bias. However, since the inverse association is true (i.e., higher BMI is associated with increased cancer risk), I think it is fair to say that lowering BMI, in addition to other lifestyle modifications, would likely have a positive impact in decreasing a person's risk for developing cancer.

References

1. Harvard Report on Cancer Prevention. Volume 2: Prevention of Human Cancer. Cancer Causes and Control. 1997; 8(Suppl 1):1–50.
2. Wolin KY, Carson K, Colditz GA: Obesity and Cancer. *Oncologist* 2010; 15(6):556–565.

Answered by:

Dr. Roger Y. Tsang



MP3 Players and Hearing Loss

7.

What evidence do we have for hearing loss due to the use of MP3 players, for example?

Question submitted by:

Dr. Sandy J. Murray

Red Deer, Alberta

Listening to music with an MP3 device is the most common form of recreational exposure to noise. Hearing loss in these cases depends on many factors, including:

- Type of device that delivers the sound
- Intensity (loudness) of the sound
- Duration of the exposure
- Susceptibility of the person
- Type of earpiece

Any sound exposure of over 85 dB for eight hours is not considered safe. Most adolescents listen to their music at much higher levels. Furthermore, they may find themselves in noisy places and be tempted to augment the volume even higher. The common belief that the manufacturer produces listening devices that can not harm the ear is wrong. Most of these listening devices can easily reach 105 dB. Also, the use of small earpieces that fit in the external ear canal tend to intensify the sound. While some experts recommend listening at 60% of the maximum volume for a period of 120 minutes, others advise 60% for only 60 minutes. Listening to higher intensities or for longer durations may lead to hearing damage.

We do not have, as of yet, any programs related to hearing loss that results from listening to music too loudly. Awareness campaigns should be developed to educate the population about the potential risks. These could be similar to the screening programs that are adapted for industrial noise exposure.

Answered by:

Dr. Ted Tewfik

8.

How to Approach Severe Halitosis in a Child

How would one approach a nine-year-old with severe halitosis? She has already seen a dentist for this problem.

Question submitted by:
Dr. Michael Manjos
Jordan Station, Ontario

The mouth is responsible for 80 to 90% of all cases of severe halitosis. Conditions, such as gingivitis, bacteria between teeth, or on the posterior tongue, stagnant saliva, or dental abscesses, can all lead to chronic, persistent bad breath. Consequently, inspection by a dentist is an excellent first step in the evaluation of severe halitosis.

When a dental visit fails to reveal the source of the halitosis, there are numerous other sites to inspect. The nose is the next most common site responsible for the production of bad breath. Post-nasal drip, especially that caused by chronic sinusitis, is a common cause of halitosis. Nasal polyps or foreign bodies can also produce this condition.

The tonsils are another source of halitosis. Chronic tonsillitis can make the breath smell foul. Also, small stones containing bacteria that form in the tonsillar crypts, called tonsilloliths, can produce bad breath.

Finally, there are other less-common causes of halitosis to be considered. Gastro-esophageal reflux can lead to bad breath, especially in the morning. Ketones in children who have a low carbohydrate intake or in those with diabetes can give the breath a foul odour. Also, the frequent intake of garlic can cause the breath to be constantly foul. [A thorough history and physical should help to reveal the source of this problem.](#)

Answered by:
Dr. Krista Helleman



When to Repeat a Pap Test

9.

On a Pap smear result, when the T-zone is not seen, does one always have to recall the patient to repeat the exam?

Question submitted by:

Dr. S. Ponrajah
Vaughan, Ontario

If a Pap smear returns as “unsatisfactory” for interpretation, then the Pap smear should be repeated. Unsatisfactory smears today refer to Pap smears with too few cells for interpretation or significant obscuring effects from blood or inflammatory cells; Pap smears are not deemed unsatisfactory due to a lack of a transformation zone. In the past, Pap smears were considered unsatisfactory if endocervical cells were not present in addition to exocervical squamous cells, thus confirming sampling of the transformation zone. [Over the last several years, evidence has accumulated showing that the absence of endocervical cells on a Pap smear does not result in poorer outcomes and pick up rates of precancerous abnormalities.](#) Indeed, in a recent review of endocervical curettage sampling at colposcopy, 99 endocervical curettage’s were required to detect an additional high-grade dysplasia.¹ Thus, the presence of endocervical cells on Pap smears is not as critical as was originally thought.

Reference

1. Gage CG, Duggan MA, Nation JG, *et al*: Detection of Cervical Cancer and Its Precursors by Endocervical Curettage in 13,115 Colposcopically Guided Biopsy Examinations. *Am J Obstet Gynecol* 2010; 203(5):481.e1–e9.

Answered by:

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CME